

## CLAIMS

What is claimed is:

1. A method for altering a Standard Commands for Programmable  
Instrumentation (SCPI) command set for instrument control,  
comprising:  
  
selecting a node to alter, wherein each command of the command set  
comprises a different combination of SCPI grammatical elements,  
wherein the SCPI grammatical elements are organized hierarchically in  
a tree data structure, and wherein the tree has nodes with each node  
comprising one of the SCPI grammatical elements;  
  
specifying an alteration to the selected node;  
  
restricting access to the selected node and to any descendant nodes of  
the selected node;  
  
altering the selected node in accordance with the specified alteration,  
wherein the step altering the selected node is performed at runtime; and  
  
removing access restriction to the selected node and to any descendant  
nodes of the selected node, wherein at least the restriction, alteration,  
and removal steps are performed while the instrument is operational.
2. The method as recited in claim 1, wherein the step altering the selected  
node comprises:  
  
when the grammatical element of the selected node is to be removed

- from the command set,
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- removing the selected node and any descendant nodes of the
- 8 selected node from the tree;
- 10 otherwise, when a new node comprising a new grammatical element is
- 12 to be added to the command set
- preparing the new node including the new grammatical element
- 14 for inclusion in the tree and
- 16 adding the new node to the tree; and
- 18 otherwise,
- 20 appropriately changing the grammatical element of the selected
- node.
3. The method as recited in claim 2, wherein at least one node other than
- 2 the selected node is accessible for instrument control while at least the
- restriction, alteration, and removal steps are performed.
4. The method as recited in claim 2, wherein the selected node is the
- 2 tree's root node.
5. The method as recited in claim 1, wherein alteration of the command
- 2 set is automatically enabled by possession of an electronic license for
- change in instrument capability as specified by the license.
6. A computer readable memory device embodying a computer program

- 2 of instructions executable by the computer for altering a Standard  
Commands for Programmable Instrumentation (SCPI) command set  
4 for instrument control, the instructions comprising:
- 6 selecting a node to alter, wherein each command of the command set  
comprises a different combination of SCPI grammatical elements,  
8 wherein the SCPI grammatical elements are organized hierarchically in  
a tree data structure, and wherein the tree has nodes with each node  
10 comprising one of the SCPI grammatical elements;
- 12 specifying an alteration to the selected node;
- 14 restricting access to the selected node and to any descendant nodes of  
the selected node;
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- 18 altering the selected node in accordance with the specified alteration,  
wherein the step altering the selected node is performed at runtime; and
- 20 removing access restriction to the selected node and to any descendant  
nodes of the selected node, wherein at least the restriction, alteration,  
22 and removal steps are performed while the instrument is operational.
7. The computer readable memory device as recited in claim 6, the
- 2 instruction altering the selected node comprising:
- 4 when the grammatical element of the selected node is to be removed  
from the command set,
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- 8 removing the selected node and any descendant nodes of the  
selected node from the tree;

- 10 otherwise, when a new node comprising a new grammatical element is  
to be added to the command set
- 12 preparing the new node including the new grammatical element  
for inclusion in the tree and
- 14 adding the new node to the tree; and
- 16 otherwise,
- 18 appropriately changing the grammatical element of the selected  
20 node.
8. The computer readable memory device as recited in claim 7, wherein at  
2 least one node other than the selected node is accessible for instrument  
control while at least the restriction, alteration, and removal steps are  
4 performed.
9. The computer readable memory device as recited in claim 7, wherein  
2 the selected node is the tree's root node.
10. The computer readable memory device as recited in claim 6, wherein  
2 alteration of the command set is automatically enabled by possession  
of an electronic license for change in instrument capability as specified  
4 by the license.
11. A system for altering a Standard Commands for Programmable  
2 Instrumentation (SCPI) command set for instrument control,  
comprising:  
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6 a grammar logic module, wherein each command of the command set  
comprises a different combination of SCPI grammatical elements,  
8 wherein the SCPI grammatical elements are organized hierarchically in  
a tree data structure, wherein the tree has nodes with each node  
10 comprising one of the SCPI grammatical elements, wherein when a  
node is selected for alteration and an alteration to the selected node is  
12 specified, the grammar logic module has capability of restricting access  
to the selected node and to any descendant nodes of the selected node,  
14 altering the selected node in accordance with the specified alteration,  
wherein the step altering the selected node is performed at runtime, and  
removing access restriction to the selected node and to any descendant  
16 nodes of the selected node, and wherein while access to the selected  
node is restricted, the instrument is operational.

12. The system as recited in claim 11,

2 wherein when the grammatical element of the selected node is to be  
4 removed from the command set,

6 the grammar logic module has capability of removing the  
selected node and any descendant nodes of the selected node  
8 from the tree;

10 otherwise, when a new node comprising a new grammatical element is  
to be added to the command set

12 the grammar logic module has capability of preparing the new  
14 node including the new grammatical element for inclusion in  
the tree and

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adding the new node to the tree; and

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otherwise,

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the grammar logic module has capability of appropriately  
changing the grammatical element of the selected node.

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13. The system as recited in claim 12, wherein at least one node other than  
the selected node is accessible for instrument control while access to  
the selected node is restricted

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14. The system as recited in claim 12, wherein the selected node is the  
tree's root node.

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15. The system as recited in claim 11, wherein alteration of the command  
set is automatically enabled by possession of an electronic license for  
change in instrument capability as specified by the license.

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16. A system for altering a Standard Commands for Programmable  
Instrumentation (SCPI) command set for instrument control,  
comprising:

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means for selecting a node to alter, wherein each command of the  
command set comprises a different combination of SCPI grammatical  
elements, wherein the SCPI grammatical elements are organized  
hierarchically in a tree data structure, and wherein the tree has nodes  
with each node comprising one of the SCPI grammatical elements;

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means for specifying an alteration to the selected node;

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means for restricting access to the selected node and to any descendant  
nodes of the selected node, wherein at least one node other than the  
selected node is accessible for instrument control and wherein the  
instrument is operable; and

when the grammatical element of the selected node is to be removed  
from the command set,

means for removing the selected node and any descendant  
nodes of the selected node from the tree;

otherwise, when a new node comprising a new grammatical element is  
to be added to the command set

means for preparing the new node including the new  
grammatical element for inclusion in the tree and

means for adding the new node to the tree; and

otherwise,

means for appropriately changing the grammatical element of  
the selected node.

means for removing access restriction to the selected node and to any  
descendant nodes of the selected node, wherein at least the restriction,  
alteration, and removal steps are performed while the instrument is  
operational.